

WHAT IS CLAIMED IS:

1. A surgical micro-resecting instrument for use with an ENT procedure, the instrument comprising:

an outer tubular member formed of an electrically conductive material and defining a proximal section, a distal section, and a lumen, wherein the distal section forms a cutting window open to the lumen and an axial passage distal the cutting window, the axial passage being fluidly connected to the lumen;

an inner tubular member disposed within the lumen of the outer tubular member, the inner tubular member defining a proximal portion and a distal portion, wherein the distal portion forms a cutting tip;

a hub assembly maintaining the proximal section of the outer tubular member and the proximal portion of the inner tubular member; and

an electrical insulator covering a region of the outer tubular member distal the hub assembly, wherein at least the cutting window is not covered by the insulator.

2. The instrument of claim 1, wherein the distal section of the outer tubular member includes a ring distal the cutting window, the ring defining the axial passage.

3. The instrument of claim 2, wherein at least a portion of the ring is not covered by the insulator.

4. The instrument of claim 3, wherein the ring terminates in a radial face, and further wherein at least the radial face is not covered by the insulator.

5. The instrument of claim 4, wherein the insulator covers a portion of the ring proximal the radial face and distal the cutting window.
6. The instrument of claim 5, wherein the insulator extends at least 0.01 inch distal the cutting window.
7. The instrument of claim 5, wherein an axial length of at least 0.01 inch of the ring proximal the radial face is not covered by the insulator.
8. The instrument of claim 2, wherein the ring has a diameter equal to a diameter of the outer tubular member immediately proximal the cutting window.
9. The instrument of claim 1, wherein an exposed exterior surface area of the distal section of the outer tubular member is less than 0.066 inch².
10. The instrument of claim 1, wherein the axial passage has a diameter not less than one-half a diameter of the lumen.
11. The instrument of claim 10, wherein the diameter of the axial passage approximates the diameter of the lumen immediately proximal the cutting window.
12. The instrument of claim 1, wherein the outer tubular member forms teeth along a perimeter of the cutting window.
13. The instrument of claim 1, wherein the inner tubular member forms a central lumen and an axial opening distal the cutting tip, the axial opening being fluidly connected to the central lumen.

14. The instrument of claim 13, wherein the distal portion of the inner tubular member includes a ring distal the cutting tip, the ring defining the axial opening.

15. The instrument of claim 13, wherein the instrument is configured such that upon final assembly, the axial passage of the outer tubular member remains open to the central lumen of the inner tubular member regardless of a rotational position of the distal portion of the inner tubular member.

16. The instrument of claim 1, wherein the hub assembly includes:
an outer hub connected to the proximal section of the outer tubular member;
an inner hub connected to the proximal portion of the inner tubular member;
and
a washer assembly disposed over the proximal portion of the inner tubular member, the washer assembly providing a bearing surface for movement of the inner tubular member relative to the outer tubular member.

17. The instrument of claim 16; wherein upon final assembly, the washer assembly contacts the outer hub.

18. The instrument of claim 17, wherein the washer assembly includes a first washer abutting a distal end of the inner hub and a second washer distal the first washer.

19. The instrument of claim 18, wherein the second washer is comprised of an amorphous thermoplastic polyetherimide material.

20. A surgical micro-resecting system comprising:
a micro-resecting instrument including:

an outer tubular member formed of an electrically conductive material and defining a proximal section, a distal section, and a lumen, wherein the distal section forms a cutting window open to the lumen and an axial passage distal the cutting window, the axial passage being fluidly connected to the lumen;

an inner tubular member disposed within the lumen of the outer tubular member, the inner tubular member defining a proximal portion and a distal portion, wherein the distal portion forms a cutting tip;

a hub assembly maintaining the proximal section of the outer tubular member and the proximal portion of the inner tubular member; and

an electrical insulator covering a region of the outer tubular member distal the hub assembly, wherein at least the cutting window is not covered by the insulator;

a powered surgical handpiece coupled to the proximal portion of the inner tubular member for driving the inner tubular member relative to the outer tubular member;

an energy source; and

wiring electrically connecting the energy source to the outer tubular member.

21. The system of claim 20, further comprising:
a vacuum source connected to the hub assembly;
wherein the hub assembly fluidly connects the vacuum source to a central lumen of the inner tubular member.

22. The system of claim 20, wherein the distal section of the outer tubular member includes a ring distal the cutting window, the ring defining the axial passage.

23. The system of claim 22, wherein the ring terminates in a radial face, and further wherein at least the radial face is not covered by the insulator.

24. The system of claim 20, wherein the axial passage has a diameter not less than one-half a diameter of the lumen.

25. The system of claim 20, wherein the outer tubular member forms teeth along a perimeter of the cutting window.

26. The system of claim 20, wherein the inner tubular member forms a central lumen and an axial opening distal the cutting tip, the axial opening being fluidly connected to the central lumen.

27. The system of claim 26, wherein the instrument is configured such that the axial passage of the outer tubular member remains open to the central lumen of the inner tubular member regardless of a rotational position of the cutting tip relative to the cutting window.

28. The system of claim 27, wherein the hub assembly includes:
an outer hub connected to the proximal section of the outer tubular member;
an inner hub connected to the proximal portion of the inner tubular member;
a first washer co-axially received over the inner tubular member and
abutting a distal end of the inner hub; and
a second washer co-axially received over the inner tubular member distal the
first washer.

29. A method for performing a micro-resecting operation at a target site of a patient as part of an ENT surgical procedure, the method comprising:

providing a micro-resecting instrument including an outer tubular member having a lumen and a distal section forming a cutting window and an axial passage distal the cutting window, the cutting window and the axial passage being fluidly connected to the lumen, an inner tubular member disposed within the lumen and having a distal portion forming a cutting tip, a hub assembly maintaining the proximal section of the outer tubular member and the proximal portion of the inner tubular member, and an electrical insulator covering a region of the outer tubular member distal the hub assembly such that at least the cutting window is not covered by the insulator;

delivering the distal section of the outer tubular member to the target site such that the cutting window is located at the target site and the cutting tip is located within the cutting window;

driving the inner tubular member relative to the outer tubular member such that the cutting tip resects tissue at the target site to effectuate a portion of an ENT procedure;

supplying energy to an exposed region of the distal section of the outer tubular member; and

cauterizing tissue at the target site via the energized exposed region.

30. The method of claim 29, further comprising:

selectively coupling the micro-resecting instrument to a powered surgical handpiece.

31. The method of claim 29, further comprising:

aspirating material from the target site into the instrument via the axial passage.

32. The method of claim 31, wherein the inner tubular member defines a central lumen, and further wherein material is aspirated through the axial passage into the central lumen.

33. The method of claim 32, wherein the inner tubular member forms an axial opening distal the cutting tip, the axial opening being fluidly connected to the central lumen of the inner tubular member, and further wherein material is aspirated through the axial opening into the central lumen.

34. The method of claim 32, wherein material is further aspirated into the central lumen via the cutting window.

35. The method of claim 32, further comprising:
orienting the inner tubular member relative to the outer tubular member such that the cutting window is closed;
wherein aspirating material into the central lumen occurs while the cutting window is closed.

36. The method of claim 31, wherein aspirating material into the instrument occurs apart from supplying energy to an exposed region of the distal section.

37. The method of claim 29, wherein the axial passage has a transverse diameter not less than one-half a diameter of the lumen immediately proximal the cutting window.